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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,205	02/17/2004	Arthur Berman	356508.01801	1947

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EXAMINER

TRA, TUYEN Q

ART UNIT	PAPER NUMBER
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2873

DATE MAILED: 11/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/781,205

Applicant(s)

BERMAN, ARTHUR

Examiner

Tuyen Q Tra

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,4-17,22-25 and 28-31 is/are rejected.
- 7) ☒ Claim(s) 2,3,18-21,26 and 27 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings filed on 02/17/2004 have been objected to by draftsman.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1, 4, 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimizu (U.S. Pat. 6,515,801 B1).

a) With respect to claim 1, Shimizu discloses lateral color compensation for projection displays a light modulator (item 440, Fig. 2); and a lens array (item 452, Fig. 2) configured to focus light on high contrast portions of light modulator (col. 18, lines 40-44).

b) With respect to claims 4 and 5, Shimizu further discloses wherein the light modulator comprises a reflective microdisplay (col. 19, line 15); wherein the reflective microdisplay comprises a Lcos microdisplay (col.1, lines 24-25).

4. Claims 9-17, 22-25 and 28-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyagaki et al. US PUB 2003/0222980A1).

a) With respect to claims 9 and 12, Miyagaki et al. discloses image display apparatus in Figure 15 and 23 comprising of a prism assembly (item 85) comprising a set of processing faces (4 faces around prism) and a set of optical components (beam splitter within prism, not numbered) configured to separate light from the light source (item 81) into a set of component

light beams (as shown 2 components of light beam) and individually direct each component light beam to one of the processing faces (where the reflective LCD 84 contact with prism) ; a reflective microdisplay (84, also shown details in Figure 15) mounted on one faces; and of the processing a lens array (item 45, Figure 15) configured to focus beams of light individually on individual high contrast portions of the microdisplay (item 42).

b) With respect to claims 10 and 11, Miyagaki et al. further discloses wherein each lens of the lens array (45, Fig. 15) is high contrast portion of a pixel (42, Fig. 15) configured to focus light on a corresponding to the lens; and aligned so that light input to the lens array (45) is individually directed by each lens to a high contrast portion of a pixel corresponding to the lens.

c) With respect to claim 13, Miyagaki et al. further discloses wherein the lens array comprises an array of convex lenses (see Fig. 15).

d) With respect to claim 22, Miyagaki et al. discloses image display apparatus and method thereof in Figure 15 comprising of step for focusing individual light beams on high contrast portions of a light modulator (item 41); and individually modulating each of the light beams via the high contrast portion of the light modulator upon which they are focused.

e) With respect to claims 14-17, 24 and 25, Miyagaki et al. further discloses wherein the lens array comprises a flat plate of glass (opposite to peak 45) having a series of peaks (45), each peak corresponding to one of the high contrast portions of the microdisplay (42); wherein one high contrast portion comprises a group of pixels of the microdisplay (41); wherein one high contrast portion comprises a pixel (42) of the microdisplay; wherein each high contrast portion of the microdisplay comprises a high contrast portion of a pixel of the microdisplay.

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f) With respect to claim 23, Miyagaki et al. further discloses wherein the light modulator comprises a reflective LCOS microdisplay (paragraph [0109]).

g) With respect to claim 28, Miyagaki et al. discloses image display apparatus in Figure 15 and 23 comprising of a light source (item 81); a projection lens (item 86); a display screen (item 87); a prism assembly (item 85) comprising a set of processing faces (4 faces around prism) and a set of optical components (beam splitter within prism, not numbered) configured to separate light from the light source (81) into a set of component light beams and individually direct each component light beam to one of the processing faces (where the reflective LCD (41) contact with prism); and a LCOS microdisplay package (item 84) mounted to each processing face; wherein: each microdisplay package (84) comprises a reflective LCOS (item 41, Fig. 15) microdisplay and a lens array configured to individually focus beams of light on high contrast portions of the microdisplay (41); the prism assembly (85) is further configured to recombine light reflected from the processing faces and output the recombined light to the projection lens; and the projection lens (86) is configured to project the recombined light onto the display screen (87, Fig. 23).

h) With respect to claim 29, Miyagaki et al. discloses image display apparatus in Figure 15 and 23 comprising of a light source (item 81); a projection lens (item 86); a prism assembly (item 85) comprising a set of processing faces (4 faces around prism) and a set of optical components (beam splitter within prism, not numbered) configured to separate light from the light source (81) into a set of component light beams and individually direct each component light beam to one of the processing faces (where the reflective LCD (41) contact with prism) and recombine light reflected from the processing faces and output the recombined light to the

projection lens (item 86); and a modulation package comprises a light modulator (item 42, Fig. 15) and a lens array (item 45, Fig. 15) configured to focus beams of light individually on individual high contrast portions of the light modulator (42).

k) With respect to claim 30 and 31, Miyagaki et al. further discloses wherein the projector in figure 23 is installed in a television; wherein the light modulators comprise reflective LCOS microdisplays (paragraph [0109]).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyagaki et al. US PUB 2003/0222980A1).

a) With respect to claim 6, Miyagaki et al. discloses image display apparatus and method thereof in Figure 15 comprising of a lens array (item 45), comprising a series of lenses arrayed in circular pattern, wherein each lens (45) is of lenses arrayed in configured to individually correspond to a high contrast area of a light modulator (item 42). However, Miyagaki et al. does not disclose a series of lenses arrayed in a rectangular pattern.

Since both circular pattern of lenses array and rectangular pattern of lenses array have the same function to focus light into LCD device, the selection of rectangular ones in place of circular one is seem as design experience upon the environment of use to ensure optimum performance. Therefore, it would have been obvious at the time the invention was made to a

person having skill in the art to replace the rectangular lenses array in optical system with rectangular lenses array for purpose of lowering manufacturing cost.

b) With respect to claims 7 and 8, Miyagaki et al. further discloses wherein the light modulator comprises a reflective LCOS microdisplay; wherein each individual high contrast area comprises a high contrast area of a pixel of the LCOS microdisplay (paragraph [0109]).

Allowable Subject Matter

7. Claims 2, 3, 18-21, 26 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The reason for the indication of allowable subject matter is that (claims 2, 26) the high contrast portions comprise non-perimeter portions of groups of pixels of the light modulator; (claims 3, 27) the high contrast portions comprise non-perimeter portions of individual pixels of the light modulator; (claim 18) wherein each high contrast portion of the microdisplay comprises section of a non-parameter section of a pixel of the microdisplay; (claim 19) wherein each lens of the lens array comprises a stack of transparent layers disclosed in the claims is not found in the prior art.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuyen Tra whose telephone number is (571) 272-2343. The examiner can normally be reached on Monday to Thursday from 8:30am to 6:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps, can be reached on (571) 272 - 2328. The fax number for this Group is (703) 872-9306.

tt

November 12, 2004



Georgia Epps
Supervisory Patent Examiner
Technology Center 2800